Remarks

Claims 1-58 are pending in the application. The Applicants respectfully ask Examiner to please add claims 59-70. Claims 1, 2, 5, 6, 8, 13, 14, 27, 40, 46 have been amended. Claims 13, 26, 39, 46, 52 stand rejected under 35 U.S.C. § 112. Claims 1-5, 8-9, 12-18, 20-22, 27-31, 33-35, 40-41, 44-48, 53, 58 stand rejected under 35 U.S.C. § 102(e). Claims 6-7, 10-11, 19, 23-24, 25-26, 32, 36-39, 42, 49, 50-52, 54-57 stand rejected under 35 U.S.C. § 103(a). No new matter is introduced herein. In view of the following remarks, reconsideration and withdrawal of these grounds for rejection is requested.

Examiner Interview

The Applicants would like to thank Examiner for granting the telephone interview on 1 February 2005 and for taking the time to thoroughly consider the present Office Action.

Claim Rejections Under 35 U.S.C. § 132

The Office Action states that the amendment filed 24 June 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. While this objection is respectively traversed, in order to expedite prosecution of this application, and since the disclosure as originally filed is broad enough to support claims directed to the use of a controller of any desired type (e.g., Paragraph 0021 and claims throughout), such as any controller utilized in connection with an aircraft, for instance, a rudder or other controller that may be grasped by a user, the term "rudder" is being added back to the specification and drawings.

The Examiner states that claims 6-11, 13-16, 18, 22-23, 27-29, 31-33, 35-37, 40, 45, 48-49, 53-54, 56-58 have been denied priority to the provisional application (60/482807). However, with respect to claim 6, the provisional application states that prior to starting a trip, user characteristics (e.g., fingerprints, retina biometric information) are loaded into a computer on-board an aircraft. [Paragraph 0008]. Further, a fingerprint reader and/or retina reader associated

with the controller (e.g. rudder) of the aircraft detects whether an authorized person is flying the aircraft by utilizing the stored user characteristics. [Paragraph 0009]. Therefore, the subject matter of claim 6 is clearly disclosed in the provisional application and the denial of priority to the filing date of the provisional application is respectfully traversed.

With respect to claims 7-11, 13-16, 18, 22-23, 27-29, 31-33, 35-37, 40, 45, 48-49, 53-54, 56-58 as currently presented, the denial of priority is respectfully traversed, however, to avoid any delay in the prosecution of the application, Applicant will not currently address the denial of priority with respect to these claims.

Claim Rejections Under 35 U.S.C. § 112

Claims 26, 39, 52 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the requirement for enabling one skilled in the art to practice the invention. Specifically, Examiner states that the specification does not allow for "engaging or disengaging" the auto-pilot when it is determined that an authorized pilot is in the pilot seat. Fig. 4, step 228 has been amended to allow for the auto-pilot to be engaged or disengaged, rather than just engaged, when the pilot's identity is verified. Support for this amendment is found in Paragraph 0019 of the present application. In part, Paragraph 0019 reads:

> 0019. In addition, the retina reader 121 can also be used in this embodiment as an additional level of security , such as to communicate with the monitoring system 116 so as to authorize engagement or disengagement of the auto-pilot. For example, the retina reader 121 can verify whether an authorized pilot is in his or her seat, and control subsequent operations based that information, where desired, such as to allow disengagement of the auto-pilot, as shown at steps 228-232.

As such, the person engaging or starting and continuing the flight of the plane must be authorized. Therefore, the Specification allows for engaging or disengaging the auto-pilot when it is determined that an authorized pilot is in the pilot seat.

Claims 13, 46 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Specifically, the Examiner states that the claim limitation "the control" in claim 13 has no antecedent basis. Claim 13 has been amended. As such, claim 13 now reads:

> 13. A security system of claim 12, wherein the one or more control mechanisms comprises at least one of an auto pilot control system, a control, an aircraft beacon system, a GPS system or any other system controlled by a control.

Claim 46 has been similarly amended. Therefore, the one or more control mechanisms may comprise, for example, at least one control or any other system controlled by a control. As such, the rejection is respectfully traversed.

Claim Rejections Under 35 U.S.C. § 102

Claims 1-5 stand rejected under 35 U.S.C. § 102 (e) as being anticipated by U.S. Patent Appl. 2003/0071743 to Seah et al. Seah discloses an aircraft monitoring and incident management system. The system comprises an on-board system on an aircraft, an incident management center on the ground, and a secure communications link between the on-board system and the incident management center. The on-board system may include an "identification and authentication device" such as a fingerprint or retinal scanner to determine whether a person is authorized to be in the cockpit of an aircraft while a flight is in progress.

Seah was filed on 9 October 2002 and claims priority to two provisional applications filed on 12 October 2001 and 12 December 2001.

Claim 1 as amended is differentiated from Seah because Seah does not store information as to all authorized users in one or more monitoring devices, and then compare the information for all authorized users against the information of the user attempting to operate the controller read by the one or more security devices. Further, the user identification disclosed in Seah does not restrict an unauthorized user from the controls of an aircraft unless an "alert mode" is activated via a separate surveillance and sensor subsystem at a separate location on the aircraft. [Paragraphs 0051, 0052]. For instance, Seah initially detects the presence of an unauthorized person or other unusual event occurring in the aircraft, and then in response activates an alert mode, which in turn has the effect to engage the aircraft sub-systems to restrict unauthorized users from the aircraft controls. [Paragraphs 0112-0121].Therefore, Seah requires two identification verification steps to lockout the controls of an aircraft from an unauthorized user, with the first step being to identify an unauthorized person and the second step being to activate an alert mode. A problem, however, with this particular arrangement of Seah is that an unauthorized user may actually take control of an aircraft prior to the activation of the alert mode (i.e., prior to the second identification verification step).

In contrast, the claimed invention does need the occurrence of a prior event to "arm" itself, in order to prevent an unauthorized user from operating the aircraft. Rather, the claimed invention is always "armed." In essence, the claimed invention operates in the complete opposite of Seah. The default of the claimed invention is to not allow operation. It is only when an **authorized user** is verified that operation is permitted. This is accomplished by storing information for **all authorized users** prior to flight, and conducting a biometric comparison of

information read by a security device and the stored information pertaining to all users. As a result, the claimed invention will lock out an unauthorized user from the various controls at any time prior to takeoff and/or during a flight, and in one identification verification step. [Paragraph 0017].

In addition, as set forth in Applicant's claim 3, a pulse reader verifies that an authorized person is "living", which prevents situations such as the use of a deceased pilot's fingerprints, retina or face by an unauthorized person to gain access to the controls to operate an aircraft. In contrast, Seah does not disclose such features, and as a result, unauthorized persons may gain access to the aircraft controls without activating the alert mode, such as by utilizing the fingerprints, retina, face, etc., of a deceased pilot.

For these reasons, Applicant respectfully requests reconsideration and allowance of claim 1, together with claims 2-7 and new claims 59, 60, 62-68 which are dependant directly or indirectly from claim 1.

Claims 8-9, 12-18, 20-22, 27-31, 33-35, 40-41, 44-48, 53, 58 stand rejected under 35 U.S.C. § 102 (e) as being anticipated by U.S. Patent Appl. 2003/0067379 to Riley. Riley discloses an in-flight aircraft flight crew authentication system. The system comprises at least one fingerprint scanning device, a communications module, a microprocessor control module and at least one smart card reader for each fingerprint scanning device. The microprocessor control module controls the fingerprint scanning device(s), smart card reader(s) and communications module. In operation, the microprocessor control module is programmed to receive and compare the information read from a smart card of a **single** user and the live scan image from the fingerprint scanning device to determine whether the user is an authorized

member of an aircraft flight crew. Riley was filed on 8 October 2002 and claims priority to a provisional application filed on 9 October 2001.

Claim 8 as well independent claims 14, 27, and 40 as currently presented are differentiated from Riley because Riley does not store information anywhere pertaining to **all** persons authorized to operate the aircraft. Stated clearly, Riley does not conduct a comparison of biometric information read against the stored biometric information of all persons authorized to operate the aircraft. Riley merely compares one person's scanned biometric information (e.g., a fingerprint) against biometric information for that one person stored on a separate smart card. As such, Riley requires both a biometric identification and a non-biometric "portable identification," such as a smart card, in order to identify a crew member. [Paragraph 0050]. In addition, Riley does not safeguard against an unauthorized user gaining control of the aircraft by utilizing the biometric information and smart card of a non-living authorized pilot.

In contrast, the claimed invention requires an authorized user to provide only biometric identification and no separate card is required. The biometric information of all authorized personnel is stored either on-board an aircraft or at a remote location prior to a flight. [Paragraph 0017]. Only one security device scan is required for reading information pertaining to a user to lock out or enable aircraft controls (i.e., a rudder, beacon, GPS, etc.), which is time efficient and beneficial whenever immediate verification is desired, such as in an emergency. [Paragraph 0020]. There is no requirement for non-biometric information or a portable credential for verification as in Riley. There is also no possibility that an authorized pilot may be restricted from immediately operating an aircraft due, for example, to the loss of an identification card or wear and tear that may render an identification card unreadable to a card reader device.

Therefore, in comparison to Riley, a legitimate authorized user has a reduced chance of being delayed or denied access to the controls of an aircraft.

In addition, as set forth in claim 10, a pulse reader can also be utilized to ensure that an authorized person is living, to prevent, for instance, the occurrence of an unauthorized person using a previously severed hand of an authorized person.

For these reasons, Applicant respectfully solicits reconsideration and allowance of claims 8, 14, 27, and 40, together with the respective dependant claims 9-13, 15-26, 28-39, 41-58 and new claim 61.

Claim Rejections Under 35 U.S.C. § 103

Claims 6-7 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Seah in view of U.S. Patent No. 6,167,333 to Gehlot. Examiner is correct in pointing out that Seah does not disclose a method of authentication or identification. Gehlot discloses a system for receiving, processing and storing real-time data from inputs, such as from a vehicle micro-processing system. In general, the system may determine whether a user is authorized to operate a vehicle. A user swipes an information card containing user information through a card reader upon entering a vehicle. [Col. 6, lines 7-11]. The read information is sent to a processing unit to determine whether the user is authorized to operate the vehicle. If the user is not authorized to operate the vehicle, the processor initiates a safety mode to disable the vehicle. [Col. 6, lines 27-31].

As mentioned above with respect to Riley, the present application requires only one biometric security device scan for information associated with an authorized user of an aircraft. As such, Seah in combination with Gehlot, which requires an external, non-biometric means of identification upon entering a vehicle, teaches away from the present application. Further, Gehlot only teaches disabling a vehicle if an unauthorized user is detected. Gehlot does not teach storing information pertaining to all authorized users. Further, for an aircraft in flight, which is the context of the present application, a method that only teaches disabling the aircraft in an emergency would not be useful, as disabling the controls may cause the aircraft to crash. Therefore, the combination of Seah with Gehlot would not result in the crew verification method of the present application. As such, claims 6-7 cannot be rendered obvious in light of Seah and Gehlot, and reconsideration and allowance of these claims is respectfully requested.

Claims 10-11, 19, 32, 42 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Riley in view of U.S. Patent No. 5,719,950 to Osten. Osten discloses a biometric authentication system. The system may generally be used to control an individual's access to physical facilities when the individual's identification code and biometric scan are processed. Again, as mentioned above, the present application does not require an identification code, smart card or any other non-biometric security device to verify an authorized user of an aircraft. In addition, the authentication scan in Osten requires a period of "approximately ten seconds" to determine whether user access is granted or denied. [Col. 5, lines 53-57]. This is not what the Applicant has claimed. An authentication lag time of several seconds is insufficient in the context of the present application where an authorized user may be required to take immediate control of an aircraft, such as in an emergency situation. Further, the present claimed application is differentiated from Riley for the reasons discussed above. As such, claims 10-11, 19, 32, 42 cannot be rendered obvious in light of Riley and Osten, and reconsideration and allowance of these claims is respectfully requested.

Claims 23, 25-26, 36, 38-39, 49, 51-52, 54-57 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Riley in view of Seah. For the various reasons stated above, the present application may be differentiated from both Riley and Seah. Therefore, claims 23, 25-26, 36 38-39, 49, 51-52, 54-57 cannot be rendered obvious in light of Riley combined with Seah, and reconsideration and allowance of these claims is respectfully requested.

Claims 24, 37, 50 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Riley in view of Osten and U.S. Patent No. 4,107,775 to Ott. Ott discloses an automatic machine interrogation for an individual seeking to gain access to a controlled area. However, Ott does not disclose or suggest using the invention in the context of aircraft controls or vehicle controls in

general. As such, the Applicants respectfully submit that Ott is not analogous art. Further, as stated above, the combination of Riley and Osten does not obviate the present application. As such, it would not be obvious to one skilled in the art to combine Ott with Riley and Osten, in order to obviate the present application. Therefore, claims 24, 37, 50 cannot be rendered obvious with respect to Riley in view of Osten and Ott, and reconsideration and allowance of these claims is respectfully requested.

Finally, claim 5 has been amended to further recited that the controller is manually operable by a pilot to fly an aircraft. Claims 59-70 are newly submitted for consideration by the Examiner. Claims 59 and 60 are dependent from claims 5 and 6, respectively, claim 61 is dependant from claim 12, claims 62-68 depend directly or indirectly from claim 1, and claim 69 depends from claim 13. Support for the new claims can be found in the specification in, for example, paragraphs 15 and 19. In light of the remarks above, favorable consideration of these claims is respectfully requested.

Conclusion

In view of the foregoing remarks, Applicants submit that this application is in condition for allowance at an early date, which action is earnestly solicited.

Respectfully submitted,

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In the Drawings

Please submit the enclosed drawing sheets containing Figures 2-4.